

Figure 1

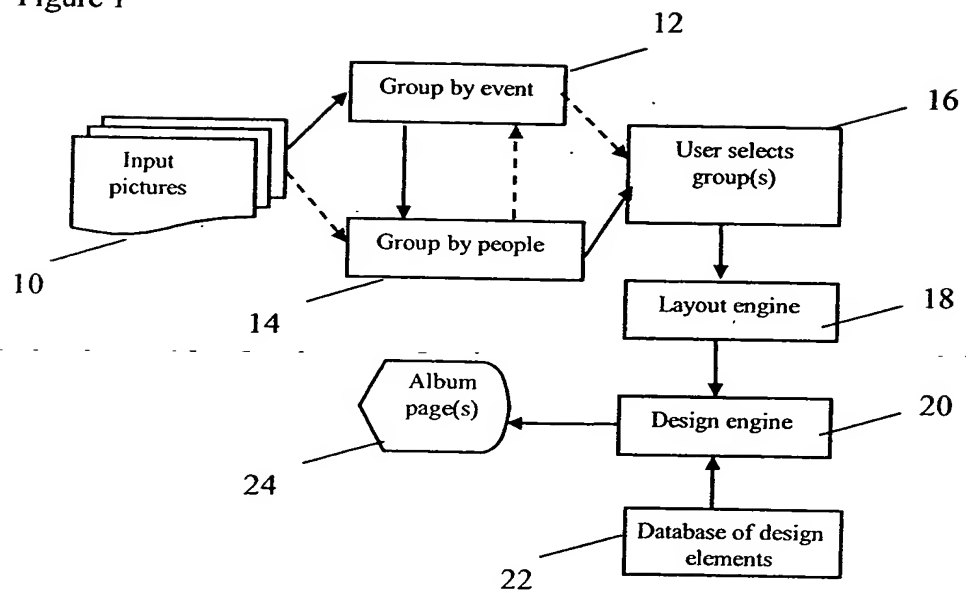


Figure 2

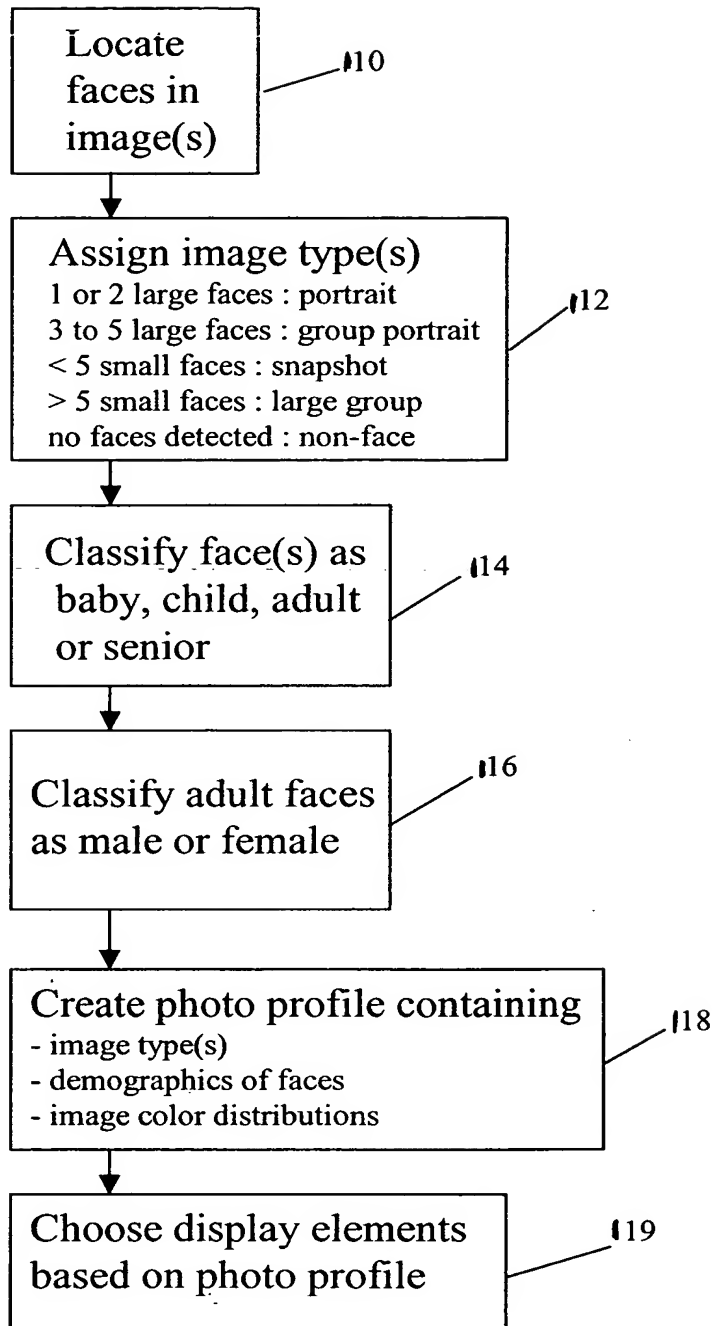


Figure 3

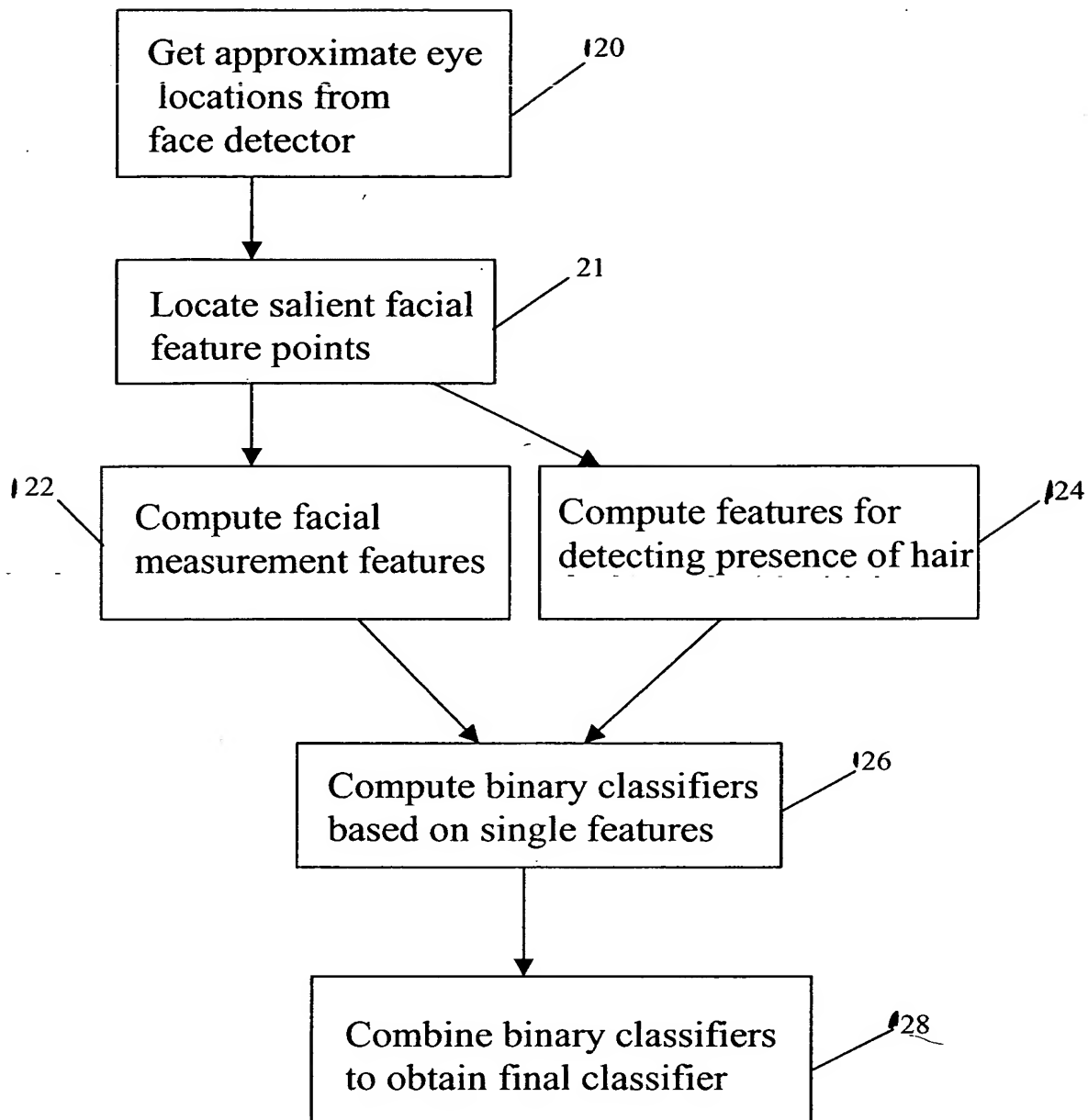


Figure 4



Figure 5

Feature number	Feature name	Calculation
0	Inter-ocular distance	P1 – P0
1	Chin angle	Radians subtended by lines P78-P75 and P72-P75
2	Jaw width	P73 – P77
3	Mouth width	P27 – P23
4	Nose width	P39 – P37
5	Face width	P69 – P81
6	Distance between eyebrows	P48 – P44
7	Head width	P67 – P57
8	Forehead width	Mean (P42 – P60, P50 – P64)
9	Eyebrow width	Mean (P46 – P42, P54 – P50)
10	Distance between pupil of eye and bottom of eyebrow	Mean (P0 – P46, P1 – P54)
11	Cheek width	Mean (P69 – P27, P81 – P23)
12	Distance between nose and lip	P32 – P2
13	Thickness of lower lip	P29 – P35
14	Distance between lip and chin	P75 – P35
15	Distance from head to chin	P75 – P62
16	Distance between eye and nose	Mean (P37 – P7, P39 – P13)
17	Distance between eye and mouth	Mean (P23 – P0, P27 – P1)
18	Distance between eye and chin	Mean (P75 – P7, P75 – P13)

Figure 6

Feature number	Significance	Histogram difference used
19	Checks for presence of beard	Chin patch - cheek patch
20	Checks for presence of mustache	Upper lip patch - cheek patch
21	Checks for presence of hair on forehead	Forehead patch - cheek patch
22	Checks for presence of longer hair	Patch next to ear - head patch

FIG. 6B

Patch	Bounding box			
	x-start	y-start	width	height
Cheek	$P80[x] + 1/3 (P37 - P80)$	$\text{Mean} (P9[y], P81[y])$	$2/3 (P37 - P80)$	$P80 - P81$
Head	$P61[x]$	$P62[y] - \text{height}$	$P63 - P61$	$P68 - P17$
Near ear	$P68[x] + \text{width}$	$P68[y]$	$P68 - P17$	$P71 - P68$
Forehead	$P60[x]$	$\text{Mean} (P60[y], P64[y])$	$P64 - P60$	$2/3 \text{ Feature } 8$
Above lip	$P23[x]$	$P38[y]$	$P27 - P23$	$P38 - P25$
Chin	$\text{Mean} (P30[x], P76[x])$	$\text{Mean} (P75[y], P35[y])$	$\text{Mean} (P28 - P30, P74 - P76)$	$1/2 (P75 - P35)$

FIG. 6A

Figure 7

Image type	Gender	Age	Design themes
Portrait	M, F	S, S	senior couple
Portrait	-	B	baby
Portrait	F, -	A, B	mother-child
Group portrait	F, F, F	C, C, C	girls
Group portrait	M, F, M	S, S, C	grandparents
Large group	Ms, Fs	As, Ss, Cs	traditional
Snapshot	M, F, F	A, A, C	family
Non-face	-	-	abstract

M : male; F: female; S: senior; A: adult; C: child; B: baby; s indicates many

Figure 8

